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IS 8917 (1978): Steel plates for galvenizing pots [MTD 4: Wrought Steel Products]



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Indian Standard
SPECIFICATION FOR
STEEL PLATES FOR GALVANIZING POTS

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Indian Standard

SPECIFICATION FOR STEEL PLATES FOR GALVANIZING POTS

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Indian Standard

SPECIFICATION FOR STEEL PLATES FOR GALVANIZING POTS

0. F O R E W O R D

0.1 This Indian Standard was adopted by the Indian Standards Institution on 15 September 1978, after the draft finalized by the Wrought Steel Products Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard has been prepared for the guidance of galvanizers to enable them for selecting proper material for the manufacture of galvanizing pots.

0.3 While formulating this standard, the experience of the local users and users from abroad has been considered. Experience has shown that galvanizing pots made of low carbon steels and very low metalloïd-content irons give satisfactory life. Lower the carbon and silicon contents in mild steel, lower is the dissolution rate of steel in liquid zinc and higher is the pot life.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements of steel for the manufacture of steel pots for holding molten zinc for hot dip galvanizing process. As the pots are fabricated by welding, guaranteed weldability is required for this steel.

2. SUPPLY OF MATERIAL

2.1 General requirements relating to supply of steel plates for galvanizing pots shall conform to IS : 1387-1967†.

*Rules for rounding off numerical values (*revised*).

†General requirements for the supply of metallurgical materials (*first revision*).

3. MANUFACTURE

3.1 Steel shall be manufactured by the open hearth, electric, basic oxygen or combination of these processes. In case any other process is employed in the manufacture, prior approval of the purchaser should be obtained. In case basic oxygen process is employed in the manufacture, the nitrogen content of steel shall not exceed 0.007 percent.

3.2 The steel shall be fine grained and killed with Al, Ti, Zr, or any other refiner.

3.3 The steel may also be supplied in semi-killed or rimming quality by mutual agreement between the purchaser and the manufacturer.

4. FREEDOM FROM DEFECTS

4.1 All finished steel shall be well and cleanly rolled to the dimensions specified. The finished material shall be free from cracks, surface flaws, laminations, rough/jagged and imperfect edges and all other harmful defects.

5. CHEMICAL COMPOSITION

5.1 The ladle analysis of steel, when made in accordance with appropriate parts of IS : 228* shall be as follows:

Steel	Constituent, Percent				
	C	Mn	S	P	Si
	Max	Max	Max	Max	Max
Grade A	0.05	0.25	0.025	0.025	0.05
Grade B	0.10	0.35	0.030	0.030	0.05

5.2 Check Analysis — The check analysis shall be carried out on the finished product from the standard position. Permissible variation in case of check analysis from limits specified under 5.1 shall be as follows:

Steel	Variation Over the Specified Maximum Limit, Percent, Max			
	C	Mn	S & P	Si
Grades A and B	0.02	0.05	0.005	0.01

*Method of chemical analysis of steels (*second revision*). (Being issued in parts).

6. DELIVERY CONDITION

6.1 The steel shall be supplied in as-rolled or normalized condition depending upon the requirements, agreed upon between the purchaser and the manufacturer.

6.1.1 When normalized, these steels shall be heated to a temperature in the range of 890 — 950°C and then cooled in air.

7. SELECTION AND PREPARATION OF TEST PIECES

7.1 The points from which samples are taken shall be so located in the product as to yield the clearest possible information regarding properties in the cross-sectional and longitudinal plates.

8. GRAIN SIZE

8.1 Occasionally manufacturer should check the grain size of the steel plate as recommended in IS : 4748-1967* and grain size should be five or finer.

9. DIMENSIONS

9.1 Unless otherwise agreed to between the purchaser and the manufacturer the nominal dimensions of the rolled steel plates conforming to this specification shall be in accordance with IS : 1730 (Part I)-1974†.

10. TOLERANCES

10.1 Unless otherwise agreed between the purchaser and the manufacturer, the rolling and cutting tolerances for steel products conforming to this standard shall be as specified in IS : 1852-1973‡.

11. CALCULATION OF WEIGHT

11.1 The mass of steel plates be calculated on the basis that steel weighs 7.85 g/cm³.

12. DELIVERY

12.1 Subject to prior agreement between the purchaser and the manufacturer, suitable protective treatment may be given to the material after rolling.

*Methods for estimating average grain size of metals.

†Dimensions for steel plate, sheet, and strip for structural and general engineering purposes : Part I Plate (*first revision*).

‡Specification for rolling and cutting tolerances for hot rolled steel products (*second revision*).

13. MARKING

13.1 Every plate of thickness 10 mm and over shall be stamped with the cast number. The manufacturer's name and/or trade-mark shall be painted or punched on the plate at a prominent location.

13.2 The steel shall be suitably colour coded, painted with a colour according to mutual agreement between the purchaser and the manufacturer.

13.3 The material may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.